UCSD Digital Nursing: Next Generation Healthcare

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Documentation computer tools for nursing homes are uncommon, with few nursing homes having access to electronic systems. At St. Paul's Nursing Home a UCSD student engineering team created a web based solution for the nursing staff progress notes. The purpose was to develop innovative design processes so other groups can emulate similar processes. By collecting information from nurse notes and feedback, a web based system with high level of user input standardization was created. The system is currently in use at the St. Paul's facility.

The aim of the Digital Nursing project was to convert nursing documents in the St. Paul's Assisted Living Facility into a computer based system where they will be much more accessible, while increasing the efficiency of activity within the employees that use them. This digital system of documents is web-based with a single database that will allow multiple users to access the information simultaneously.

St. Paul's Community Care Center is a senior home offering assisted living services in San Diego, which currently does not have access to an Electronic Health Record system. St. Paul's requested an undergraduate engineering student team from UCSD to identify and create a computer based solution for nursing staff.

The team identified the first nursing document to be converted to computer based format as the 24 Hour Log (progress notes), chosen because the log cannot be edited and read by multiple nurses at the same time, and difficult to comprehend and reference because of its lack of structure and handwritten nature. A problem that the facility was facing was the easy occurrence of repetition while nurses recorded data. Along with other problems, the goal was to eliminate them all as the digital nursing team worked creatively in developing a flawless digital design.

The Digital Nursing system was designed with the help of three sub-teams: User Center Design (UCD), Software and Hardware. The UCD team helped preserve the current nursing practices to allow for easy navigation throughout the new system. The software team implemented the UCD team's observations and created interfaces into a digital format. Finally, the hardware team handled the equipment that is required for this system to be operating smoothly such as computers, casings, etc.

The team developed and completed computer based (web based) documentation system which is currently in use. System incorporates creation and usage of a single web server (containing database and web application), and laptop stations placed throughout the facility.

The team created innovative design processes (research → prototyping → deployment) so other groups can emulate similar processes, and gained extensive knowledge of complete user interface design process, from initial research until final integration deployment.

The team obtained useful insight into developing computer based documentation systems for nursing home applications.

Future plans include integration of Nursing Care Plan and other documents into the system.
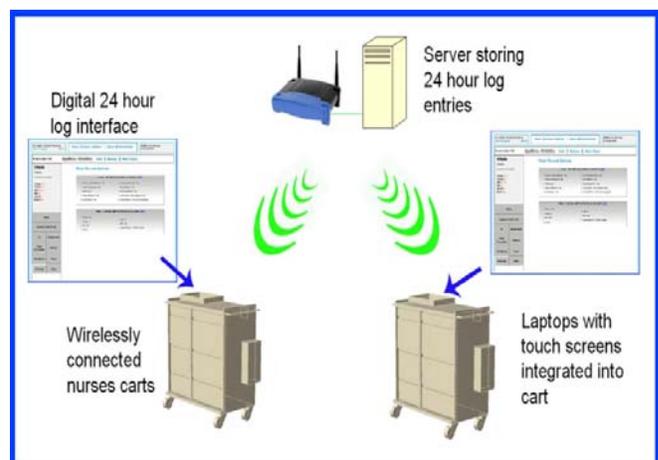
Overview of the Digital Nursing System

UCSD Digital Nursing team
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Teams in Engineering Service Digital Nursing Team consisting of thirty members, University of California, San Diego